The New Normal of Sustainabilty and Resilience in Ocean Freight

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HPCLCnet.org

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Connecting and simplifying global supply chains

A.P. Moller - Maersk enables its customers to trade and grow by transporting goods anywhere.

Maersk works to provide customers with a simple end-to-end offering of products and services, seamless customer engagement and a superior end-to-end delivery network, taking the complexity out of global supply chains.

700+

container vessels are deployed on routes to and from

100,000+

customers globally, large and small

20%

of all containers moved in the world

121

countries on all continents where we call 343 ports

95,000+

Maersk colleagues all over the world

1,4 million

Forty-foot reefer containers moved around the world per year

300+

Warehouses and cold stores in over 50 countries

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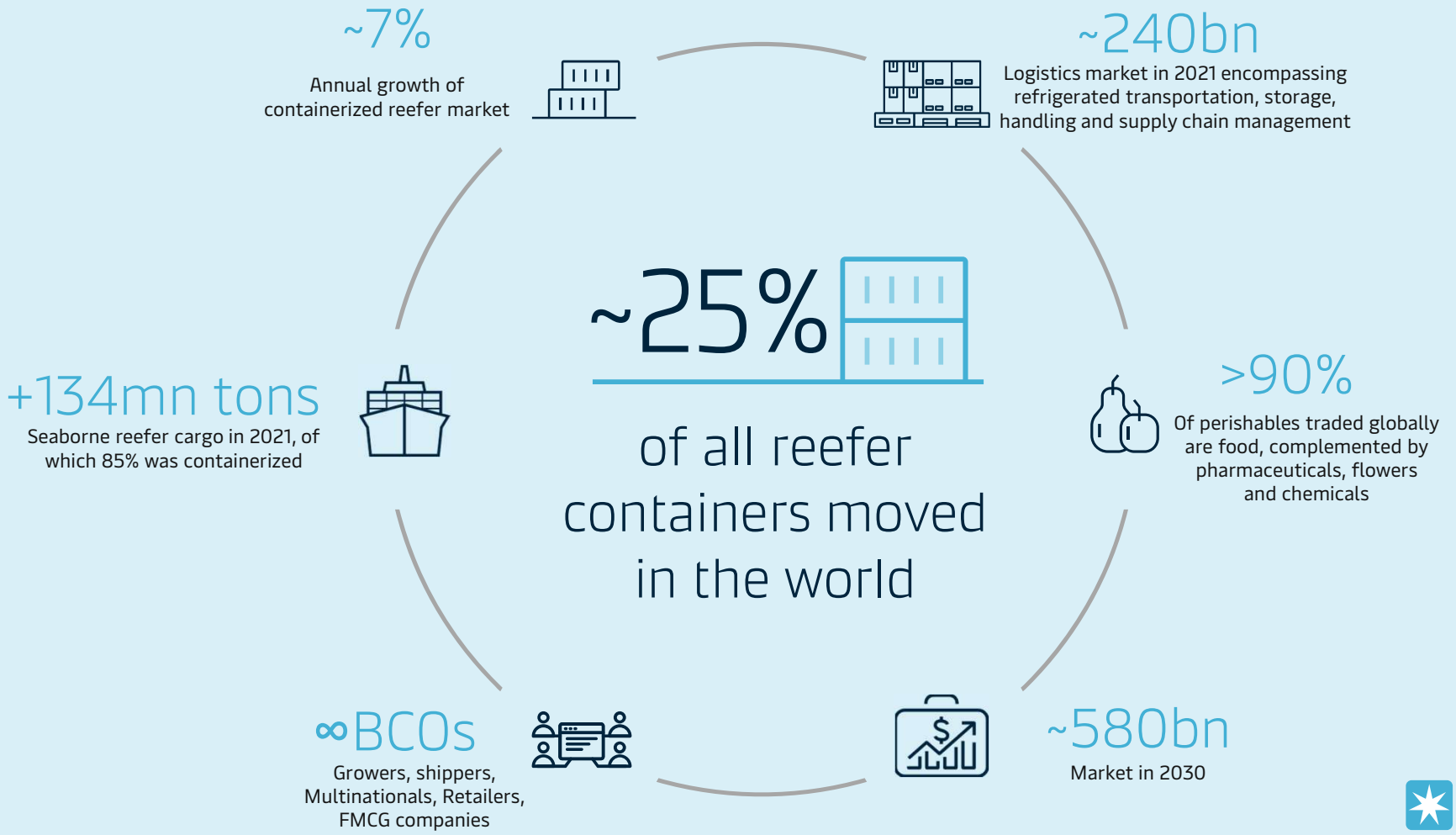
The Cold Chain Industry at a glance

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Resilience within the Ocean industry
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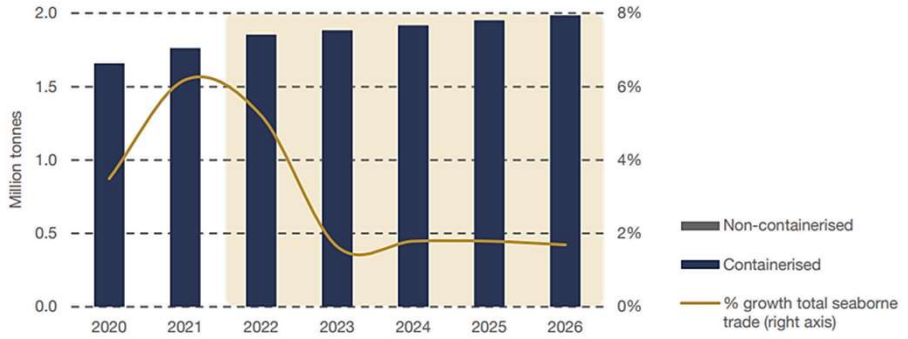
Pharma & Healthcare Transportation Market & Trend

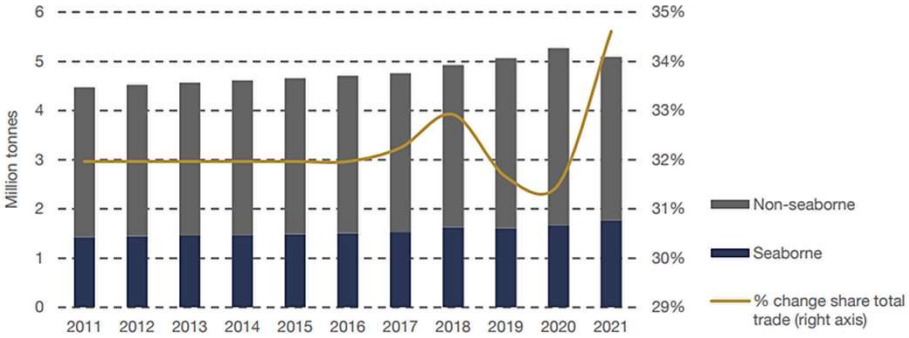
- Despite the recent challenges on capacity and schedule reliability the Pharma & Healthcare industry continues going through a modal shift
- Increased compliance needs for ocean providers since standards are rapidly evolving (Quality Assurance, GxP regulations, Risk Assessments, Visibility etc.)
- Costs are the primary contributor towards this shift with sustainability becoming
  a more important decision criteria
  and so does resilience

Global seaborne pharmaceuticals trade by mode



Source: Drewry Maritime Research

Reefer trade in pharmaceuticals by mode



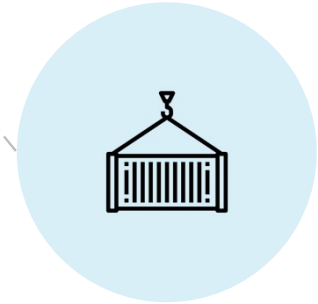
Source: Drewry Maritime Research

Customers transporting pharmaceuticals are facing a high level of fragmentation in their cold chain, resulting in multiple pain points

Increased complexity, coordination and risk of error

Negative impact on product quality and shelf-life

Lack of supplier reliability and accountability



Lack of cargo visibility and control

Is the Ocean industry ready to address and solve the pain?

GMP/ GSP / health regulati ons

GMP/ GSP / health regulati ons

Manufacturing & Distribution

Customer & Distribution

Supply Chain (GDP)
Strengthening Supply Chain Quality, Resilience & Visibility

*GMP: Good Manufacturing Practice | GSP: Good Storage Practice | GDP: Good Distribution Practice

Potential for improvement

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Resilience. What is it really?

Covid-19 impact on supply chain

% of respondents

100%

Production and distribution problems

85%

Inefficient digital technologies

48%

Slowed decision-making in planning

Source: McKinsey & Company

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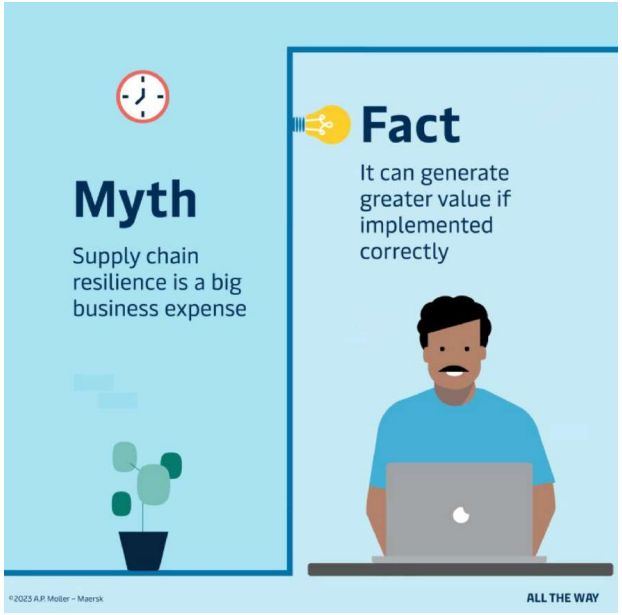
Resilient supply chains build competitive advantage



Accelerate revenue growth

40%-60%
decrease in product-development cycle

15%-25%
increase in plant output

Improve customer satisfaction

20%-40%
increase in perfect order rate

20%-30%
improvement in customer satisfaction

Increase savings and cash flow

1%-2%
lower operating expenses

10%-20%
lower transportation costs

10%-40%
increase in inventory turnover

Minimize risk and increase resilience

buffers reduce disruptions to the network

20%-60%
improvement in forecasting accuracy with advanced analysis

Source: Bain & Company[6]

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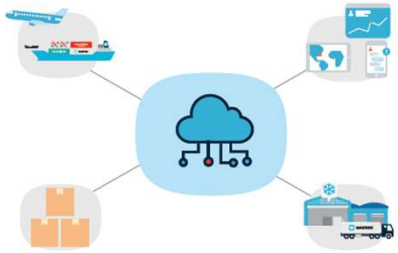
Taking Action to Improve Supply Chain Resilience

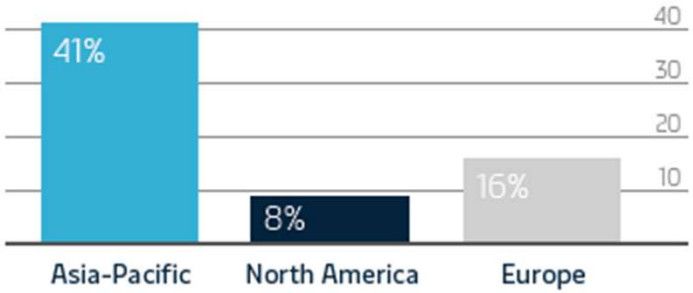
Resilience requires:

Data to know how and when to act

Capability to act on your data



Supply chain managers increasing investment in digital tools by over 50%



Source: The Economist Intelligence Unit, Citibank, 2021[7]

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Agility Drives Resilience

According to a Bain & Company report , 41% of surveyed companies now rank agility as a top two supply chain priority, compared to just 17% before Covid-19, showing the increasing emphasis on this area.

"It's Time to Build Resilience into Retail and Consumer Goods Supply Chains" Bain & Company, Oct 2020

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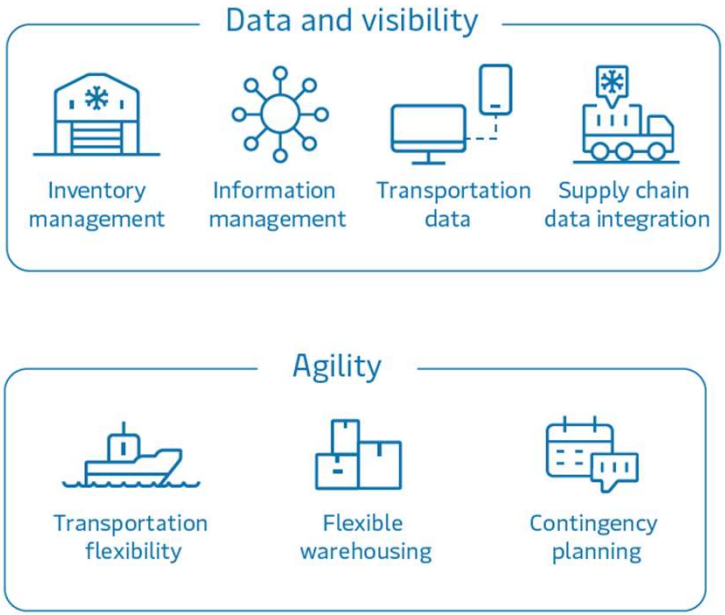
Call to Action



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The journey towards a sustainable future

We are in a climate emergency

46+ bn tons **of CO_2e emissions** emitted globally every year (2018)

+20% of **CO_2e emissions** emitted globally from transportation, thereof freight accounts for 40%[1]

3.5 bn tons **of CO_2 emissions** emitted from global logistics (end to end) every year (estimated)

66 mio tons **of CO_2 emitted** from A.P. Moller-Maersk operations (all scopes, 2021)

+10 mio tons **of fuel oil** consumed each year by the A.P. Moller-Maersk fleet

'A code red for humanity' - *UN Secretary General, António Guterres*
'We are the first generation to know we are destroying our planet and the last that can do anything about it' - *WWF*

[1] road 30%, sea 5%, air 4%, rail 1%

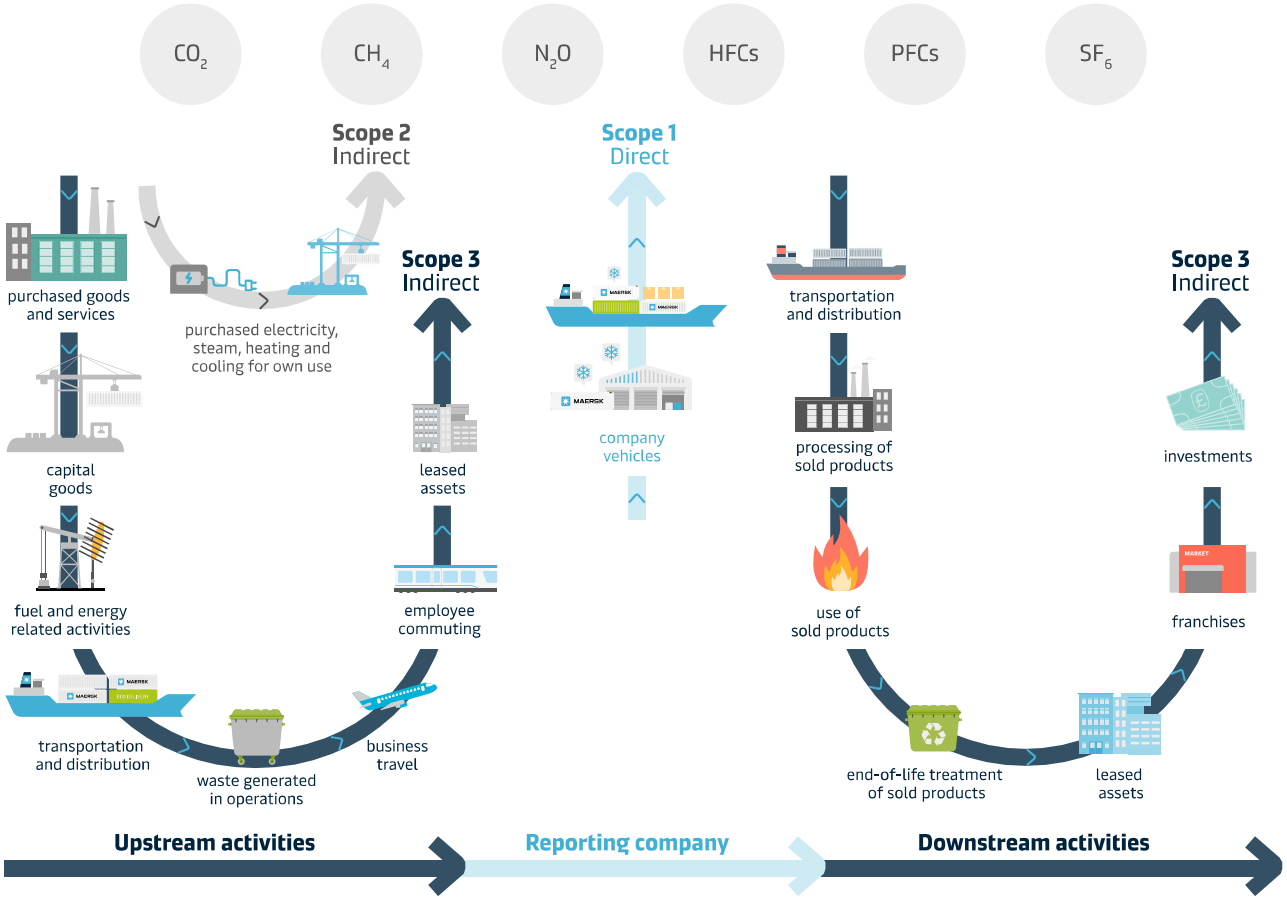
Sources: Worldbank, International Transport Forum, APMM sustainability report 2021

GHG Emission scopes

SCOPE 1
Direct Emissions
Emissions operations that are owned or controlled by the reporting company

SCOPE 2
Indirect Emissions
Indirect emissions from purchased utilities

SCOPE 3
Value Chain Emissions
All other emissions from a company's value chain



Maersk CO2 emissions calculations per transport mode

602 g/t-km

Air freight

62 g/t-km

Truck

31 g/t-km

Barge

22 g/t-km

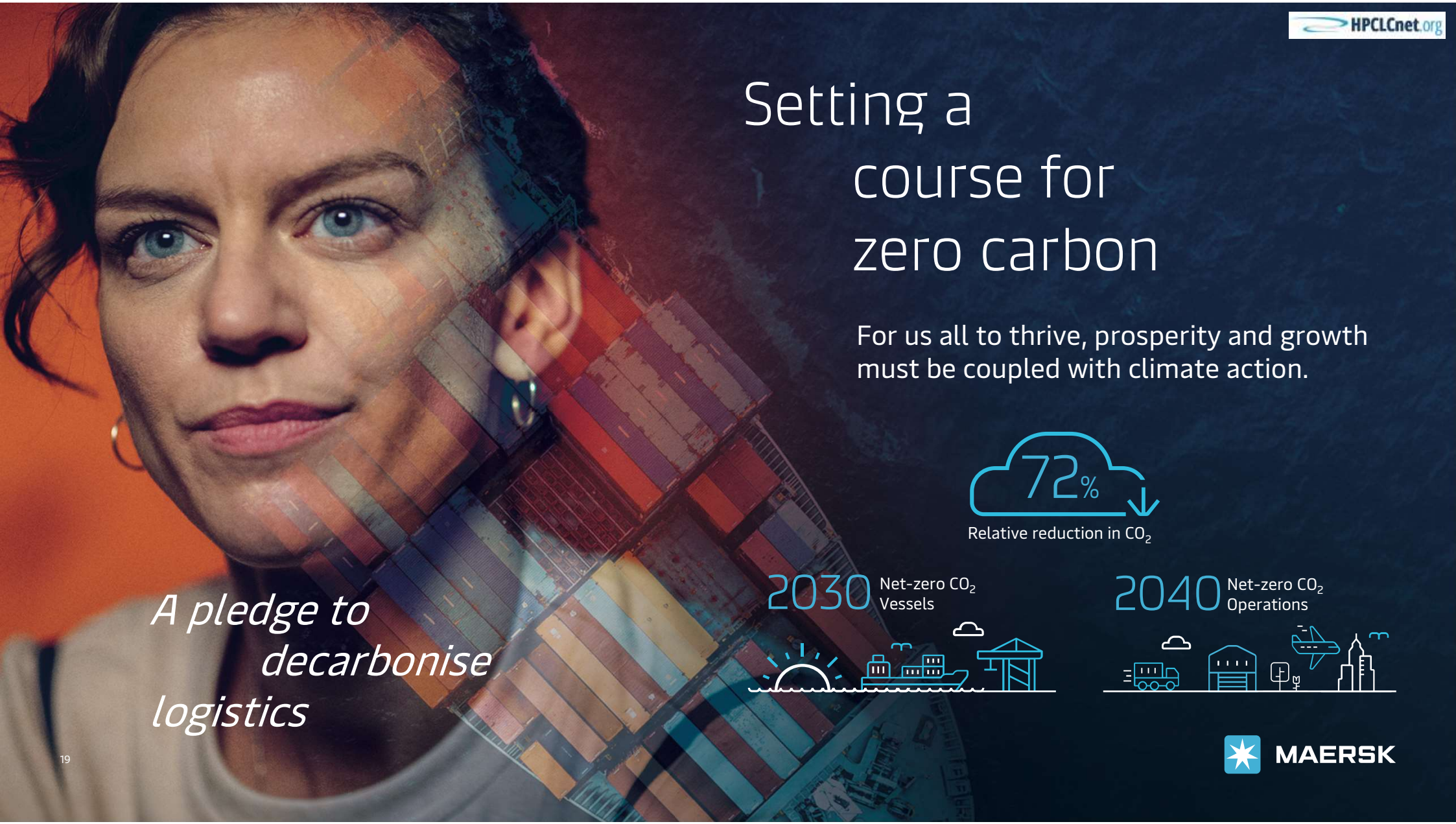
Rail

3 g/t-km

Very large container vessel

Calculation Methodology and data

- Across transport mode calculations are based the Global Logistics Emission Council (GLEC) methodology which is aligned with the GHG protocol scope 3 “Distance based methodology”.
- CO2 data is based on the following:
  - **Clean Cargo Working Group (CCWG):** Ocean emission data (Link)
  - **Global Logistics Emissions Council (GLEC):** Other transport modes (Link)
  - **Network for Transport Measures (NTM):** Other data (Link)
- All Maersk ocean CO2 data has been verified by Lloyds Register. All other ocean data is verified according to CCWG verification protocol
- Maersk’s CO2 emission calculation methodology and sources of emission factors has been verified by MIT and GLEC
- When possible actual (primary) emission data is used. When primary data is not available average (secondary) emission data is used.
  All in accordance with GLEC methodology.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Setting a course for zero carbon
For us all to thrive, prosperity and growth must be coupled with climate action.
72%
Relative reduction in CO_2
2030 Net-zero CO_2 Vessels
2040 Net-zero CO_2 Operations
A pledge to decarbonise logistics
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Priority fuels for green shipping

Fuel	Key advantages	Key limitations/risks
Biodiesel (from waste feedstocks)	• Biodiesel market already exists • Can be used as drop-in fuel in existing vessels and engines	• Limited availability of suitable biomass feedstock • Price pressure due to competing demand from road transport and aviation
Green methanol (bio-methanol and e-methanol including lignin enhanced fuels)	• Can be produced from sustainable biomass and renewable electricity • Vessels running on methanol are already in operation today • Well-known handling	• Bio-methanol: availability of suitable biomass feedstock • E-methanol: Availability of biogenic CO_2 source and renewable electricity
Green ammonia (e-ammonia)	• Can be produced at scale from renewable electricity • Contains no greenhouse gases	• Safety and toxicity challenges • Infrastructure challenges at ports • Future costs depend on cost of renewable electricity and availability of engine, expected in 2025

Note: Green is defined as fuels or energy that have 'low' or 'very low' greenhouse gas emissions on a life cycle basis. See box to the right.

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Roadmap to deliver net zero by 2040

2018	2019	2020	2021	2022	2023	2023- 2025	2030	2040
Net zero ambition launched	ECO delivery introduced	Priority future fuels defined	Investment in 13 green methonal vessels	New decarbonisation vision	World's first container ship on green methanol	Nineteen 16,000 TEU vessels sailing on methanol	• Industry leading green customer offerings • 50% reduction of absolute direct climate impact through the decade	Net zero across our business and 100% green solutions to customers

OUR DECARBONISATION COMMITMENTS

2030: Industry-leading green customer offerings

- Ocean: 25% of cargo transported with green fuels
- Air: min. 30% of cargo transported with green fuels
- Contract logistics and cold chain: MIn. 90% green operations (scope 1 and 2)
- Inland transportation: Industry leading green offering (targets to be set in 2022)

2030: 50% reduction of absolute direct climate impact*

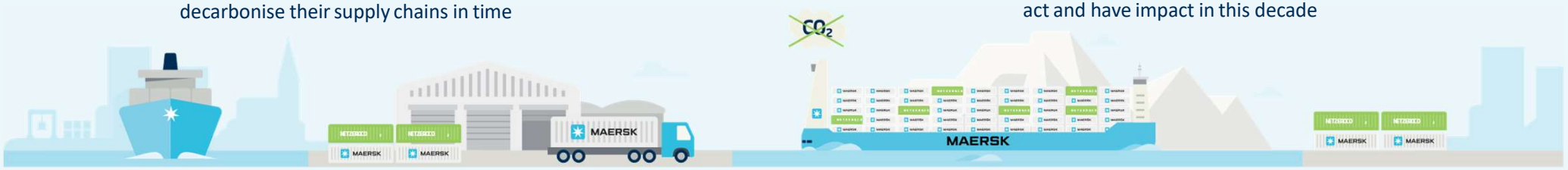
- Ocean ~50% reduction in emissions intensity
- Terminals ~70% absolute reduction (scope 1 & 2)
- Aligned with Science Based Target net zero criteria
- Natural Climate Solutions above and beyond the SBTi

2040: Net zero across our business

- 100% Green solutions to our customers
- Net Zero greenhouse gas emission across the whole business/all scopes
- Aligned with Science Based Target net zero criteria

Our **customer commitment** to decarbonise their supply chains in time

... a **societal commitment** to act and have impact in this decade



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* 2020 baseline